**2014**

**MINISTRY OF EDUCATION Addis Ababa, Ethiopia**

03/03/14

**POSTGRADUATE DIPLOMA IN TEACHING (PGDT) Course Syllabus**

**Course Syllabus for Post Graduate Diploma in Teaching Secondary & Preparatory School Level ICT**

**Course Title: ICT Subject Area Methods II**

Course Title: **ICT Subject Area Methods II**

Course Code: **PGDT-ICT102**

Credit Hours: **4**

Contact Hours**: 6**

# This PGDT course sylabus was designed by a workshop called by Ministry of Education from 17-06-2006 to 26-06-2006 (E.C.). The participating members were

1. Fantahun Bogale (BSc. Computer Science & IT , MSc. Computer Science, HDP certified)

Contact: +251 912 07 11 04, [fantishb@gmail.com](mailto:fantishb@gmail.com)

1. Kedir Kamu (BSc. Computer Science & IT , MSc. Computer Science)

Contact: +251 911 82 53 67, [kedirkan@yahoo.com](mailto:kedirkan@yahoo.com)

1. Umer Kedir (BSc. Computer Science , MSc. Computer Science, HDP certified)

Contact: +251 912 00 25 53 , [fessesu@gmail.com](mailto:fessesu@gmail.com)

Ministry of Education

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Addis Ababa, Ethiopia

# COURSE PROFILE

**Course Title:** ICT Subject Area Methods II

**Course Code: PGDT-ICT102**

**Credit Hours:** 4

**Contact Hours:** 6

**Prerequisite course/s:** None

**Eligibility:** BSc Degree in Computer Science/IT/IMS/Computer Engineering/Software Engineering and other Related/Relevant Fields

NB:

* *The course code contains 10 characters excluding the hyphen:*
* *the first four characters indicate that the course is a PGDT course*
* *the next three characters indicate the subject area is ICT*
* *from the last three numeric digits the first digit indicates the year the course is given while the remaining digits simply indicate the course sequence*
* *The 4 credit hours are divided into 3 lecture hours and 3 laboratory training hours per week. Hence the total contact hours per week will be 6.*

# COURSE DESCRIPTION

This course is aimed at enriching the prospective teacher’s delivery capability by using appropriate teaching/learning methods and strategies specific to the particular contents of the secondary and preparatory school ICT subject syllabus.

The course units are divided based on the theme they contain. All secondary and preparatory school level ICT syllabus contents are included in the thematic topics. Hence, practical teaching/learning methods and strategies are provided at each unit and sub-units as required.

Specific teacher and student activities are designed in such a way that could enhance the teaching/learning process. Themes that require laboratory training do have both theoretical and laboratory based student/teacher activities. Appropriate assessment methods are provided at each unit.

# OBJECTIVES OF THE COURSE

After completing this course the prospective teacher will be able to internalize and effectively teach secondary and preparatory school students,

* Introduction to ICT,
* Computer Software,
* Information systems,
* The Internet and Web site Development,
* Image Processing and Multimedia,
* Basic Troubleshooting,

using appropriate teaching/learning methods & strategies for specific topics.

# COURSE CONTENTS

# UNIT 1:TEACHING INTRODUCTION TO ICT (12 hrs.)

* 1. **Objectives**

After completion of this unit the prospective teacher will be able to internalize and effectively teach secondary and preparatory school students,

* + - the basics of ICT,
    - basics of computer hardware and software components,
    - the major improvements/innovations in each generation of computers,
    - Classification of computers,
    - the various data representation methods in a computer system,
    - the impacts of ICT,

using the appropriate teaching methods and strategies for the respective topics.

* 1. **Unit Contents**
     1. Teaching Basics of ICT
        1. Components of ICT: Computer, Communication Networks, Know-how
        2. Basics of Computer Networking: Definition, Types, Applications
        3. Information Sources, and characteristics
     2. Teaching Computer System
        1. *Computer Hardware* : Input Devices, Output Devices, Processing Devices, Storage Devices, Communication Devices
        2. *Computer Software*: System Software, Application Software, Utility Software
     3. Teaching Generation of Computers
     4. Teaching Types of Computers
     5. Teaching Introduction to Data Representation
     6. Teaching Impact of ICT in everyday life
  2. **Methods and Strategies**

The delivery of this unit is based on theoretical discussions, laboratory work and field visit. Teaching-learning methodology will be student-centered with appropriate guidance of instructor. Teaching and assessment methods in this unit are summarized in below table:

|  |  |  |
| --- | --- | --- |
| **Section** | **Teaching Method** | **Assessment Method** |
| 1.2.1 | Brain storming, gap-lecture and group discussions | question & answer **,Quiz** |
| 1.2.2 | Gap-lecture, Demonstration and laboratory exercises | question & answer **,Lab-test** |
| 1.2.3 | Brain storming and gap-lecture, classroom session observation | question & answer, observation report evaluation |
| 1.2.4 | Brain storming and gap-lecture, classroom session observation | question & answer, observation report evaluation |
| 1.2.5 | gap-lecture | question & answer |
| 1.2.6 | Group discussions and assignments | question & answer |
| All | Unit summary lecture | Unit summary questions, tests |

* 1. **Activities Summary**

|  |  |  |
| --- | --- | --- |
|  | **Students’ Activities** | **Instructor’s Activities** |
| **Out of Class/**  **Laboratory Activities** | * Read relevant material for the upcoming session * Review previous sessions * Do home take assignments and exams * Plan school session observation * Make school session observation * Prepare report for school session observation | * Review relevant materials for the upcomming class * Prepare teaching notes * Prepare Assessment instruments * Correct assignments, tests, exams return to the students with relevant comment * Plan school session observation placement * Review school session observation report and provide feedback |
| **Theory Class Activities** | * Attend the gap-lecture,brian storming * asking questions and clarifications on the lecture as well as other given tasks, * participation in group discussions | * give gap-lecture on the lesson * clarify doubts * arrange groups and give students activities, * providing feedback, assessing students |
| **Laboratory Activities** | * Attend pre-lab talks, * do laboratory tasks given by the laboratory instructor, * Attend practical demonstrations in laboratory, | * Giving pre-lab lecture, * show demonstrations, * give laboratory activities to the students, * give feedbacks, assess students |

* 1. **Required Instructional Materials and Equipment**
* Stationery,
* white board,
* white-board marker,
* white-board duster,
* computer,
* projector,
* printer,
* scanner,
* storage devices,
* classroom(size 40),
* computer laboratory size(20),
* short notes,
* laboratory manuals,
* application software
* utility software
* maintenance toolkit,
* failed computer components
  1. **References(Reading Material for the Unit)**

1. Fikire Sitota and Belay Tedla: *Fundamentals of Information Technology*; AA, Mega Publishing Enterprise, 2002.
2. Dida Midekso, *information technology:* Addis Ababa University Printing Press, revised press, 2006.
3. ITL ESL , I*ntroduction to computer science* , Pearson edition ,2004
4. Kenneth C Laudon, Carol Guercio Traver, Jane Price laudon : *Information Technology and Society*, 2nd edition, 1996.
5. William Stallings: Computer Organization and Architecture, 5/E, 6/E, Prentice Hall, 2003
6. Donald H. Sanders *computer concepts and applications; USA; Von Hoffman press,* 1987

# UNIT 2: COMPUTER SOFTWARE

* 1. **Unit Objectives**

After completion of this unit the prospective teacher will be able to internalize and effectively teach secondary and preparatory school students,

* Various types of software,
* System software and application software,
* *Microsoft Office 2007 package software:* MS word 2007, MS Excel 2007, MS Publisher 2007, MS Access 2007, MS Power Point 2007,
* High-level programming languages,
* LOGO programming language,

using appropriate teaching methods and strategies.

* 1. **Unit Contents**
     1. Introduction to computer software
     2. System software Vs Application Software
     3. Working with Application Software
        1. Word Processing: MS word 2007
        2. Spreadsheet Management: MS Excel 2007
        3. Desktop Publishing: MS Publisher 2007
        4. Database Management: MS Access 2007
        5. Making Presentations: MS Power Point 2007
     4. Programming languages
        1. Introduction to programming languages
        2. Programming with LOGO
  2. **Methods and Strategies**

The delivery of this unit is based on theoretical discussions, laboratory work and field visit. Additionally, the teaching-learning methodology will be student-centered with appropriate guidance of instructor. Teaching and assessment methods in this unit are summarized in below table:

|  |  |  |
| --- | --- | --- |
| **Section** | **Teaching Method** | **Assessment Method** |
| 2.2.1 | Brain storming, gap-lecture | question & answer |
| 2.2.2 | Brain storming, Group discussions | question & answer |
| 2.2.3 | Gap-lecture, Demonstration and laboratory exercises | question & answer **,Lab-test** |
| 2.2.4 | Gap-lecture, Demonstration and laboratory exercises | question & answer **,Lab-test, project work** |
| 2.2.3,  2.2.4 | Obseravarion of a particular secondary and preparatory school ICT teaching-learning practice | Observation Report evaluation |
| All | Unit summary | Written Test , Quiz, Project work |

* 1. **Activities summary**

|  |  |  |
| --- | --- | --- |
|  | **Students’ Activities** | **Instructor’s Activities** |
| **Out of Class/**  **Laboratory Activities** | * Read relevant material for the upcoming session * Review previous sessions * Do home take assignments and exams * Plan school session observation on section 2.2.3 and 2.2.4 * Prepare report for school session observation | * Review relevant materials for the upcomming class * Prepare teaching notes * Prepare Assessment instruments * Correct assignments, tests, exams return to the students with relevant comment * Plan school session observation placement * Review school session observation report and provide feedback |
| **Theory Class Activities** | * Attend the gap-lecture,brian storming * asking questions and clarifications on the lecture as well as other given tasks, * participate in group discussions | * give gap-lecture on the lesson * clarify doubts * arrange groups and give students activities, * providing feedback, assessing students |
| **Laboratory Activities** | * Attend pre-lab talks, * do laboratory tasks given by the laboratory instructor, * Attend practical demonstrations in laboratory, * doing mini projects given by the instructor | * Giving pre-lab lecture, * show demonstrations, * give laboratory activities to the students, * give feedbacks, assess students * assess students project work |

* 1. **Instructional Resources**
* Stationery,
* white board,
* white-board marker,
* white-board duster,
* computer,
* projector,
* printer,
* scanner,
* storage devices,
* classroom(size 40),
* computer laboratory size(20),
* short notes,
* laboratory manuals,
* application software
* utility software
* maintenance toolkit,
* failed computer components
  1. **References**

1. Bridget Somekh, *Pedagogy and Learning with ICT*, 2007
2. Fikire Sitota and Belay Tedla: *Fundamentals of Information Technology*; AA, Mega Publishing Enterprise, 2002.
3. Dida Midekso, *information technology:* Addis Ababa University Printing Press, revised press, 2006.
4. ITL ESL , I*ntroduction to computer science* , Pearson edition ,2004
5. Kenneth C Laudon, Carol Guercio Traver, Jane Price laudon : *Information Technology and Society*, 2nd edition, 1996.
6. William Stallings: Computer Organization and Architecture, 5/E, 6/E, Prentice Hall, 2003
7. Donald H. Sandar *computer concepts and applications; USA; Von Hoffman press,* 1987

# UNIT 3: INFORMATION SYSTEMS

* 1. **Unit learning outcome/objectives**

1. After completion of this unit the prospective teacher will be able to internalize and effectively teach secondary and preparatory school students,
   * + General concepts of information systems,
     + Types of information systems in the organization,
     + Basics of e-learning,
     + Basics of e-government,
     + Basics of e- banking,
     + Basic of e-libraries,
     + Basic of e-commerce,
     + System analysis,

using appropriate teaching methods & strategies and assessment methods.

* 1. **Unit contents** 
     1. General concepts of information systems
     2. Types of information systems in the organization
     3. Basics of e-learning
     4. Basics of e-government
     5. Basics of e- banking
     6. Basic of e-libraries
     7. Basic of e-commerce
     8. System analysis
  2. **Methods and strategy**

The delivery of this unit is based on theoretical discussions, laboratory demonstration and field visit. Additionally, the teaching-learning methodology will be student-centered with appropriate guidance of instructor. Teaching and assessment methods in this unit are summarized in below table:

|  |  |  |
| --- | --- | --- |
| **Section** | **Teaching Method** | **Assessment Method** |
| 3.2.1 | Brain storming, gap-lecture | question & answer |
| 3.2.2 | Brain storming, gap-lecture | question & answer |
| 3.2.3,3.2.4,  3.2.5,3.2.6,  3.2.7 | Gap-lecture, Demonstration and field visit | question & answer**,** field visit report evaluation |
| 3.2.1,3.2.2 | Obseravarion of a particular secondary and preparatory school ICT teaching-learning practice | Observation report evaluation |
| All | Unit summary | Unit review questions |

* 1. **Activities Summary**

|  |  |  |
| --- | --- | --- |
|  | **Students’ Activities** | **Instructor’s Activities** |
| **Out of Class/**  **Laboratory Activities** | * Read relevant material for the upcoming session * Review previous sessions * Do home take assignments and exams * Plan school session observation on section 3.2.1 and 3.2.2 * Prepare report for school session observation * Attend field visit | * Review relevant materials for the upcomming class * Prepare teaching notes * Prepare Assessment instruments * Correct assignments, tests, exams return to the students with relevant comment * Plan school session observation placement * Review school session observation report and provide feedback * Plan for field visit for one section atleast |
| **Theory Class Activities** | * Attend the gap-lecture,brian storming * asking questions and clarifications on the lecture as well as other given tasks, * participation in group discussions | * give gap-lecture on the lesson * clarify doubts * arrange groups and give students activities, * providing feedback, assessing students |
| **Laboratory Activities** | * Attend pre-lab talks, * do laboratory tasks given by the laboratory instructor, * Attend practical demonstrations in laboratory, | * Giving pre-lab lecture, * show demonstrations, * give laboratory activities to the students, * give feedbacks, assess students |

* 1. **Required Instructional Materials and Equipment**
* Stationery,
* white board,
* white-board marker,
* white-board duster,
* computer,
* projector,
* printer,
* scanner,
* storage devices,
* classroom(size 40),
  1. **References**

1. Hoffer, Jeffrey A.; Joey F. George; and Joseph S. Valacich (1999) Modern Systems Analysis and Design. Massachusetts: Addison-Wesley**.**
2. ITL ESL, Introduction to computer science, Pearson edition, 2004
3. Pressman, Roger (2001) Software Engineering: A Practitioner's Approach, 5th ed. McGraw-Hill.
4. Fikire Sitota and Belay Tedla: Fundamentals of Information Technology; AA, Mega Publishing Enterprise, 2002.

# UNIT 4: THE INTERNET AND WEBPAGE DEVELOPMENT

* 1. **Learning Outcomes**

After completion of this unit the prospective teacher will be able to internalize and effectively teach secondary and preparatory school students,

* Basics of the Internet and www,
* The various services of the Internet,
* Advanced search on the web,
* Using Blogs, Wikis, and Podcasts,
* Social Networking,
* Definitions of Website, Webpage,
* Planning and Developing Web Pages,
* Publishing a Website,

Using appropriate teaching methods & strategies and assessment methods for the specific topics.

* 1. **Unit Content** 
     1. The Internet
        1. Introduction to the Internet & www
        2. Services of the Internet: e-mail, chatting, web browsing, etc
        3. Advanced Search
        4. Using Blogs, Wikis, and Podcasts
        5. Social Networking
     2. Website Development
        1. Definitions: Website, Webpage,
        2. Planning and Developing Web Pages
        3. Publishing a Website
  2. **Methods and Strategies**

This unit deals with two related things, the Internet and websites where the whole content of the Internet is accessed through. The teaching/learning of the major portions of these topics needs practical sessions in which the trainee gets him/herself engaged.

The delivery of this unit is based on theoretical discussions, laboratory demonstration and field visit. Additionally, the teaching-learning methodology will be student-centered with appropriate guidance of instructor. Teaching and assessment methods in this unit are summarized in below table:

|  |  |  |
| --- | --- | --- |
| **Section** | **Teaching Method** | **Assessment Method** |
| 4.2.1 | Brain storming, gap-lecture, assignment, demonstration, school classroom session observation | question & answer, assignment evaluation, Observation report evaluation |
| 4.2.2 | Brain storming, gap-lecture , Demonstration and Project work | question & answer**,** project evaluation |
| All | Unit summary | Unit review questions, test |

* 1. **Activities**

|  |  |  |
| --- | --- | --- |
|  | **Students’ Activities** | **Instructor’s Activities** |
| **Out of Class/**  **Laboratory Activities** | * Read relevant material for the upcoming session * Review previous sessions * Do home take assignments and exams * Plan school session observation on section 4.2.1 and 4.2.2 * Prepare report for school session observation | * Review relevant materials for the upcomming class * Prepare teaching notes * Prepare Assessment instruments * Correct assignments, tests, exams return to the students with relevant comment * Plan school session observation placement * Review school session observation report and provide feedback |
| **Theory Class Activities** | * Attend the gap-lecture,brian storming * asking questions and clarifications on the lecture as well as other given tasks, | * give gap-lecture on the lesson * clarify doubts * providing feedback, assessing students |
| **Laboratory Activities** | * Attend pre-lab talks, * do laboratory tasks given by the laboratory instructor, * Attend practical demonstrations in laboratory, * Doing mini project | * Giving pre-lab lecture, * show demonstrations, * give laboratory activities to the students, * give feedbacks, assess students * Assess project work |

* 1. **Instructional Resources**
* Stationery,
* white board,
* white-board marker,
* white-board duster,
* computer,
* projector,
* printer,
* scanner,
* storage devices,
* classroom(size 40),
* computer laboratory size(20),
* short notes,
* laboratory manuals,
* application software
* utility software
  1. **References**

1. Thomas A. Angelo and K. Patricia Cross. Classroom Assessment Techniques: A Handbook for College Teachers. Jossey-Bass publishers.1993.
2. Lorna M. Earl. Assessment as Learning: Using Classroom Assessment to Maximize Student Learning. Corwin sage company, 2012
3. Horton, William; et al. (1996) The Web Page Design Cookbook. New York: John Wiley & Sons Inc.
4. [Ian Lloyd](http://www.amazon.com/s/ref=ntt_athr_dp_sr_1?_encoding=UTF8&field-author=Ian%20Lloyd&search-alias=books&sort=relevancerank)*, Build Your Own Web Site the Right Way Using HTML & CSS*, 2nd Edition
5. Craig Grannell, *The Essential Guide to CSS and HTML Web Design, 2007*
6. Jeffrey Zeldman*,* [Ethan Marcotte](http://www.amazon.com/s/ref=ntt_athr_dp_sr_2?_encoding=UTF8&field-author=Ethan%20Marcotte&search-alias=books&sort=relevancerank), *Designing with Web Standards,* 3rd edition

# UNIT 5: TEACHING IMAGE PROCESSING AND MULTIMEDIA

* 1. **UNIT OBJECTIVES**

After completion of this unit the prospective teacher will be able to internalize and effectively teach secondary and preparatory school students,

* Basics of Image Processing,
* Working with Adobe Photoshop,
* Fundamentals of Multimedia,
* Working with Multimedia Authoring Tools,

using appropriate teaching methods & strategies and assessment methods.

* 1. **UNIT CONTENTS**
     1. Teaching Basics of Image Processing
     2. Teaching Working with Adobe Photoshop
        1. Familiarization with Adobe Photoshop
        2. Basic Image Editing
     3. Teaching Fundamentals of Multimedia
        1. Importance of Multimedia
        2. Components of Multimedia
        3. Hardware and Software requirement for Multimedia
        4. Introduction to Multimedia Authoring Tools
     4. Teaching Working with Multimedia Authoring Tools
        1. Inserting and editing text
        2. Working with images and graphics
        3. Working with sound and digital movies
  2. **METHODS AND STRATEGIES**

The teaching-learning methodology will be student-centered with appropriate guidance of instructor/s during the students’ activities. Active learning methods like brain storming, gap-lecture, demonstrations and reading assignments should be used.

|  |  |  |
| --- | --- | --- |
| **Section** | **Teaching method** | **Assessment method** |
| 5.2.1 | Gap-lecture, group discussion ,demonstration and reading assignment | Session review question, reading assignment evaluation |
| 5.2.2 | Gap –lecture and demonstration | Class exercise and Session review question |
| 5.2.3 | Gap-lecture, group discussion ,demonstration and reading assignment | Session review question, reading assignment evaluation |
| 5.2.4 | Gap –lecture and demonstration | Class exercise and Session review question |
|  | Unit summary | Unit summary assignments and test |

* 1. **ACTIVITIES**

|  |  |  |
| --- | --- | --- |
|  | **Teachers’ activity** | **Students’ activity** |
| **Out of class/out of laboratory activities** | * Read relevant material for the upcoming session * Plan for the upcoming session * Prepare teaching notes * Prepare Assessment instruments * Plan session summary mechanisms * Plan for unit summary questions and test * Evaluate assignments and exams * Plan for observation * Evaluate observation report | * Review reference materials * Do assignment and laboratory exercise * Make group discussion * Get ready and plan for observation of lecture |
| **Theory class activity** | * Revise previous session * Provide gap- lecture * Assign group discussion * Evaluate assignments presentation * Ask question and discuss on the answer | * Present and demonstrate assignments * Attend introductory lectures * Ask for clarfication * Make group discussion |
| **Laboratory activity** | * Give pre-laboratory lectures * Show how to install image processing and multimedia tools * Demonstrate how to use Adobe photoshop for image processing with step-by-step examples * Demonstrate the application of Macromedia Flash as a multimedia authoring tool with examples | * Attend given pre-laboratory lectures * Attend demonstration of installation of image processing and multimedia tools while taking notes * Attend demonstration of Adobe photoshop and take notes * Attend and take notes of the demonstration of Macromedia Flash multimedia authoring tools * Demonstrate laboratory excersies |

* 1. **INSTRUCTIONAL RESOURCES**
* Multimedia Authoring Tools (like Macromedia Flash).
* Adobe Photoshop CS5 software
* Stationery
* white board
* white-board marker
* white-board duster
* computer
* projector
* printer
* scanner
* storage devices
* Lecture hall/ classroom(size 40)
* computer laboratory size(20)
* short notes
* Laboratory manuals
  1. **REFERENCES**

1. Corey Hilz , Focus On Adobe Photoshop: Focus on the Fundamentals, Focal press,2011
2. Doug Sahlin, *Flash 5 Virtual Classroom, McGraw-Hill, 2001*.
3. Ze-Nian Li and Mark S. Drew, Fundamentals of Multimedia, Prentice Hall, 2004.

# UNIT 6: BASIC TROUBLESHOOTING

* 1. **LEARNING OUTCOMES**

After completion of this unit the prospective teacher will be able to internalize and effectively teach secondary and preparatory school students,

* + - Basics of Preventive Maintenance,
    - Basic Safety Issues,
    - Hardware Maintenance Basics,
* Software Maintenance Basics (Installing/Repairing Uninstalling Application Software),

using appropriate teaching methods & strategies and assessment methods.

* 1. **UNIT CONTENTS**
     1. Teaching Basics of Preventive Maintenance
     2. Teaching Basic Safety Issues
     3. Teaching Hardware Maintenance Basics
     4. Teaching Software Maintenance Basics (Installing/Repairing /Uninstalling Application Software)
  2. **Methods and Strategies**

Basically this unit is to be delivered through on-hand-practice. Therefore, the instructor will first lecture the basics of the topics and then demonstrate the applications in laboratory. Each trainee is supposed to engage himself/herself in thorough practice of the demonstration.

Theory classes will be used for elaborating introductory issues. In laboratory the trainer provides pre-laboratory lectures and steps of the practical activities. The instructor should make available basic maintenance tools. Then the students will be in appropriate groups and upon the guidance of the instructor start the practice. Following up the practice sessions, the instructor should assess the students for learning.

In the absence of real hardware/software problems ideal case studies could help learn the lessons.

|  |  |  |
| --- | --- | --- |
| **Section** | **Teaching method** | **Assessment method** |
| 6.2.1 | Gap-lecture, demonstration and reading assignment | Session review question, reading assignment evaluation |
| 6.2.2, 6.2.3, 6.2.4 | Gap –lecture , brainstorming ,demonstration, problem based learning , class activity and group discussion | Class activity of problem solving ,Session review question, group assignments , individual assignments |
|  | Unit summary | Unit summary mini project and micro teaching evaluation |

* 1. **Activities**

|  |  |  |
| --- | --- | --- |
|  | **Teachers’ activity** | **Students’ activity** |
| **Out of class activity** | * Read relevant material for the upcoming session * Plan for the upcoming session * Prepare teaching notes * Prepare Assessment instruments * Plan session summary mechanisms * Plan for unit summary questions and test * Evaluate assignments and exams * Collect the required maintenance tools and failed components * Plan for micro teaching titles | * Review reference materials * Do assignment and laboratory exercise * Make group discussion * Prepare and plan for micro teaching |
| **Theory class activity** | * Revise previous lesson * Provide introductory Gap-lectures about the basics of the topics | * Attend the revision * Attend introductory lectures * Ask for clarification * Make group dicsussion * Conduct micro teaching * Present assignments |
| **Laboratory class activity** | * Give pre-laboratory lectures * Make demonstrations * Facilitate and guide group practices,   assess students | * Attend given pre-laboratory lectures * Attend demonstrations * Engage in group practices * Demonstrate laboratory assignemnts |

* 1. **Instructional Resources**
* Stationery
* white board-marker
* white board, computer
* LCD Projector,
* maintenance toolkit
* Failed computer hardware components
* software (application software, OS, utility software)
* computer laboratory
* short not
* laboratory manuals
* cleaning agents
  1. **References**

1. Charles J. Brooks, *A+ Certification Training Guide*, 3rd edition
2. David Groth & Dan Newland etal, *A+ Complete Study Guide*, 2nd edition
3. **COURSE ASSESSMENT AND STRATEGIES**

# In this course, there will be two types of assessments. Assessment of learning and assessment for learning. Continuous assessments will be given through the various assessment methods mentioned in each unit, and the instructor should give appropriate feedback to the trainees after each assessment. The total mark assigned for continuous assessments should not exceed 50 %. The summative exam conducted at the end of the course, which accounts the other 50% of the total evaluation, should assess how much the trainee grasped the relevant contents of the course.

# COURSE REQUIREMENTS

The prospective teacher should fulfill the following to get a PASS status.

1. More than 85% Class as well as lab attendance
2. At least 6 lesson plans for lessons selected from UNIT 1-6 & conduct and be observed at least 2 teaching sessions.
3. At least 50% score from the grand total score

|  |  |  |
| --- | --- | --- |
| **Raw Mark**  **Interval [100 %]** | **Corresponding**  **Fixed Number Grades** | **Letter Grade** |
| [90, 100] | 4.0 | A+ |
| [85, 90) | 4.0 | A |
| [80, 85) | 3.75 | A- |
| [75, 80) | 3.5 | B+ |
| [70, 75) | 3.0 | B |
| [65, 70) | 2.75 | B- |
| [60, 65) | 2.5 | C+ |
| [50,60) | 2.0 | C |
| [45, 50) | 1.75 | C- |
| [40, 45) | 1.5 | D+ |
| [35, 40) | 1. | D |
| [30, 35) | 0.75 | D- |
| [0,30) | 0 | F |

# GRADING POLICY